

1988. *J. Biol. Chem.* 263:3952–3959). This publication provides remedies for some of the uncertainties of another rather long, often programmatic and technical chapter by G. D. Prestwich (“Reception and Catabolism”). Hopefully, some of his other claims on transducing functions in a number of species will also be verified soon. The final chapter is a good, compact treatment of the “Molecular Mechanism of Vertebrate Olfaction” with no specific relation to pheromones (nobody ever found specific pheromone receptor cells in noses, in contrast to insects). Interestingly, this chapter is meant to be an “introduction” for the insect people, yet is wrongly placed in this book.

In my personal view, the most important future result of pheromone biochemistry will be the understanding of how, and under what evolutionary pressure, speciation took place. The “royal” question is a behavioral one: any mutation which changes the composition of the signal or its receptor risks a misunderstanding or even a total blockage of the communication. There are indications that we are beginning to understand the respective mechanism on the sender side, yet we are still far from this goal on the receiving side.

Since many biochemical functions in pheromone systems are still largely unknown, it must have been difficult for the editors to plan this book. The result is a not too satisfying compromise. The book contains good general chapters with little biochemistry, a series of interesting biosynthesis chapters (some too packed with methods), confusing or even premature olfactorial chemistry, and two chapters which do not relate to the theme. One also wonders, whether the editors wanted essay-style chapters, reviews or methodological introductions?

For the insider, most chapters will be useful, for they tell in what direction the field is moving. Newcomers and students might like the introductory and overview parts. Unfortunately, some of the chapters even lack a summarizing paragraph and everybody will miss a final author index, which would help to use this book as a reference source.—*Dietrich Schneider, Max-Planck-Institut für Verhaltensphysiologie, D-8131 Seewiesen, Fed. Rep. Germany.*

J. New York Entomol. Soc. 97(1):122–123, 1989

Portraits of South Australian Geometrid Moths.—Noel McFarland. 1988. Published by the author. iv + 400 pp., over 1,400 figs. \$80.00 soft cover (includes packing and postage). Copies may be obtained from the author: P.O. Box 1404, Sierra Vista, Arizona 85636.

The author has had a long time interest in rearing Lepidoptera, especially members of the Geometridae. This goes back to when he was a young boy living in southern California; he became adept not only at life history work but also became well acquainted with the local fauna. During 1965–1969 he lived in South Australia, and continued his rearings of geometrids. But he was almost completely unprepared for “the mind-boggling array of incredible forms” that he found there, both as larvae and adults. Further, the great majority of these geometrids had never been studied or documented. It was at this time that he learned the necessary photographic techniques to be used to document the rearings. And, as they say, the rest is history, as seen in this most impressive volume.

Seventy-two different species are fully illustrated and described, usually with several views of the adults, eggs (when available), mature larvae and pupae; each species is covered in a separate chapter in the book. Also included are references to the original descriptions and pertinent literature, locations of the type specimens and of preserved material, localities, food plants, habits and general remarks. The author's original descriptive notes were made while he was rearing each individual species; these have been rewritten for this book.

The organization of the volume may be thought of as rather unorthodox; for example, the separate indices for zoological and botanical names are at the front. The heart of the book consists of two sections with the photographs and descriptions of the species; the first 46 chapters cover the members of the Ennominae and Oenochrominae, while the remaining 26 are devoted to the remaining subfamilies. The first portion of the book includes, in addition to the indices, the preface, introduction, locality maps and habitat photos. Between the two main sections will be found general comments on the subfamilies, food plants, and three appendices, one each on the resting positions of adults, of geometrid larvae, and of the forms of crypsis. Following the second section there is another appendix, very helpful discussions of rearing and preserving techniques, photography, acknowledgments, glossary and bibliography. This ordering of subjects takes a bit of getting used to, but it works out rather well after you get the hang of it.

Do not expect setal maps, drawings of cremasters, genitalia, and the like; this volume was never meant to be a revisionary work. McFarland set out to rear as many geometrids as possible—many were from his back yard or from a short distance from his home—and to obtain a photographic and descriptive record of the living organisms, showing them as they appeared, not as the usual preserved specimens. In this he has done a superb job.

Life history material was preserved, much of it being deposited in the South Australian Museum. Thus it is available for future workers, who will need to study the details of the structures of the early stages. From this, considerable light may be shed upon the higher classification of the Geometridae, something that is badly needed, as the author points out.

It is extremely valuable having these 72 life histories in a single volume rather than scattered throughout the literature. McFarland is to be congratulated on handling his material in this manner, and in such a professional way. This book sets high standards; it is to be hoped that it will encourage other workers to do life history work in such a thorough and complete manner.

The author has earned a "well done" for all the work he has done, both on the life histories themselves and for publishing such a valuable addition to the extremely small amount of our knowledge on geometrid life histories.—*Frederick H. Rindge, Department of Entomology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024.*

J. New York Entomol. Soc. 97(1):123–124, 1989

Proceedings of the Fifth International Symposium on Trichoptera, Lyon, France 21–26 July 1986. M. Bournard, and H. Tachet (eds.) Dr. W. Junk Publishers, Dordrecht 1987, xxiii + 397 pp. 250.00 Dfl.